CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.06/KRIDL/WMM/Gradation/2014-15

10.06.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer**, Byatarayanapura Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, BBMP, Bangalore.

Name of Work : Improvements to roads and drains at Mestripalya Cross Roads in Ward No. 06, Thanisandra Village Limits, BBMP, Bangalore.

Reference : EE/BTP/BBMP/KRIDL/WO/ /2013-14

Date of Testing : 10.06.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): 25575

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	775	775	3.0	97.0	95-100
22.4	6548	7323	28.6	71.4	60-80
11.2	4823	12146	47.5	52.5	40-60
4.75	3724	15870	62.1	37.9	25-40
2.36	3520	19390	75.8	24.2	15-30
0.600	4030	23420	91.6	8.4	8-22
0.075	1870	25290	98.9	1.1	0-8

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ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿಬಿಎಂಪಿ, ಬೆಂಗಳೂರು-24

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Job No.: CTCE/BBMP/W.No.06/KRIDL/WMM/AIV/2014-15 10.06.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL, BBMP, Bangalore.
Name of the Work	Improvements to roads and drains at Mestripalya Cross Roads in Ward No. 06, Thanisandra Village Limits, BBMP, Bangalore.
Reference	EE/BTP/BBMP/KRIDL/WO/ /2013-14
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	10.06.2014

Sl No.	Details	Trial No. 1	Trial No. 2	Trial No. 3	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	375	382	379	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	78	81	84	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	297	301	295	
4	Aggregate Impact value = percent fines	20.80	21.20	22.16	
	100* (W_2/W_1)%				21.39

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Job No.: CTCE/BBMP/W.No.06/KRIDL/WMM/S-T/2014-15 10.06.2014

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL, BBMP, Bangalore.
Name of Work	Improvements to roads and drains at Mestripalya Cross Roads in Ward No. 06, Thanisandra Village Limits, BBMP, Bangalore.
Reference	EE/BTP/BBMP/KRIDL/WO/ /2013-14
Technical Reference	IS 2386(Part 1) 1963 (RA 2007)
Type of Mix	Wet Mix Macadam
Date of Testing	10.06.2014

Result ; Flakiness Index = **12.26%**

Elongation Index = **13.13%**

Result : Combined Flakiness & Elongation index 25.39%

Comments:

→ Maximum allowable Flakiness & Elongation Index for Wet mix Macadam is 30%

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Job No.: CTCE/BBMP/W.No.06/KRIDL/WMM/AL/2014-15 10.06.2014

ATTERBERG LIMITS TEST FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, BBMP, Bangalore.

Name of Work : Improvements to roads and drains at Mestripalya Cross Roads in Ward No. 06, Thanisandra Village Limits, BBMP, Bangalore.

Reference : EE/BTP/BBMP/KRIDL/WO/ /2013-14

Date of Testing : 10.06.2014

Material : WMM

Sample Location : WMM Mix Plant

As per MORTH Table 400-11

Sl. No.	Particulars	Test Results	Standards as per Specifications
1	Liquid Limit, %	21.85	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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Job No.: CTCE/BBMP/W.No.06/KRIDL/SDBC/Bitumen/2014-15 18.06.2014

BITUMEN CONTENT DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

AASHTO T 164

CLIENT	**Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, BBMP, Bangalore.
NAME OF THE WORK	Improvements to roads and drains at Mestripalya Cross Roads in Ward No. 06, Thanisandra Village Limits, BBMP, Bangalore.
REFERENCE	EE/BTP/BBMP/KRIDL/WO/ /2013-14
SAMPLE I/D	Roads in Mestripalya Cross Roads in Ward No. 06, Thanisandra Village
DATE OF TESTING	18.06.2014

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	476.5	475.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	23.5	24.50
7. Bitumen content in %	4.70	4.90
8. Average	4.80	

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BITUMEN GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

AASHTO T 30

CLIENT	**Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, BBMP, Bangalore.
NAME OF THE WORK	Improvements to roads and drains at Mestripalya Cross Roads in Ward No. 06, Thanisandra Village Limits, BBMP, Bangalore.
REFERENCE	EE/BTP/BBMP/KRIDL/WO/ /2013-14
SAMPLE I/D	Roads in Mestripalya Cross Roads in Ward No. 06, Thanisandra Village
DATE OF TESTING	18.06.2014

GRADATION AFTER EXTRACTION

SIEVE SIZE	Trail 1				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
13.2	0	0	0	100	100
9.5	22.59	4.74	4.74	95.26	90-100
4.75	250.75	52.62	57.36	42.64	35-51
2.36	50.57	10.61	67.98	32.02	24-39
1.18	46.95	9.85	77.83	22.17	15-30
0.3	38.76	8.13	85.96	14.04	9-19
0.075	35.28	7.40	93.37	6.63	3-8

SIEVE SIZE	Trail 2				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
13.2	0	0	0	100	100
9.5	21.45	4.51	4.51	95.49	90-100
4.75	241.36	50.76	55.27	44.73	35-51
2.36	56.75	11.93	67.21	32.79	24-39
1.18	53.34	11.22	78.42	21.58	15-30
0.3	46.89	9.86	88.28	11.72	9-19
0.075	27.12	5.70	93.99	6.01	3-8

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